REMARKS

Reconsideration of this application in view of the foregoing amendments and the following remarks is respectfully requested.

The Examiner rejected claim 1 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular the Examiner stated that he cannot understand how the system comprising the step of "inputting a plurality of channels" and that it is not clear as to the scope and definition of "design criteria".

Applicants respectfully submit that the claim has been amended in order to more particularly point out and distinctly claim the invention. With regard to the Examiner's particular points, the claim is directed toward a method and has been amended to state "inputting data" as one part of the method. Additionally, although the term "design criteria" is no longer in claim 1, it was not removed due to the Examiner's rejection, and is actually used in subsequent claims; however, Applicants respectfully submit that the definition and scope of the term "design criteria" should be interpreted in light of the specification.

The Examiner rejected claim 1 under 35 U.S.C. §102 as being anticipated by Leitch et al. (US Patent No. 5,761,614). The Examiner states that Leitch et al.

> discloses a method for the prediction and optimization of a communication system comprising the step of:
>
> take input data from a plurality of channels;
>
> prediction a performance of each channel using a plurality of parameter to characterize the performance of the channel; and
>
> optimizing the parameters of each channel (Leitch et al., fig 4, col. 5 lines 35-65).

Applicants respectfully submit that Leitch et al. does not teach, suggest, or render obvious Applicants' invention as claimed. Applicants submit that Leitch et al. teaches a

method and system for optimizing radio receiver equipment. Applicants respectfully submit that the system and method taught by Leitch et al. performs such optimization by optimizing the strength of a signal. (See, for example, Leitch et al. Fig. 4, col. 5, lines 22-65.)

Applicants claim a method and system for prediction and optimization of a communications system wherein the bit rate of a communications channel is optimized. Applicants respectfully submit that Leitch et al. does not teach or suggest optimization of bit rate in a communications system. Therefore, Applicants respectfully submit that the invention as claimed is not taught, suggested, or rendered obvious by Leitch et al. and request removal of the rejection under 35 U.S.C. §102.

For the foregoing reasons, Applicants respectfully submit that the applicable objections and rejections have been overcome and that the claims are in condition for allowance.

Applicants respectfully request a three month extension of time and have submitted herewith a separate petition for such extension and the requisite fee.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of this application, the Examiner is invited to contact the undersigned at (408) 720-8300.

Respectfully submitted,

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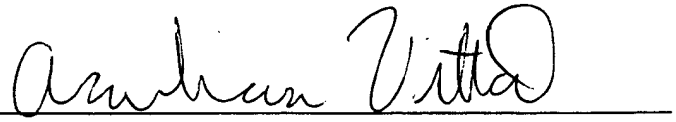
Date: 4/23/2002



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Reg. No. 45,182
Filed Under 37 C.F.R.§1.34(a)

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MARKED UP VERSION OF THE CLAIMS

Please amend the following claims:

1. (Once Amended) A method for the prediction and optimization of a communications system comprising [the steps of]:

inputting data from a plurality of channels of the communications system;

predicting a performance of [each channel] at least one of the plurality of channels using a plurality of parameters to characterize the performance of the channel; and

optimizing the parameters of [each channel] at least one of the plurality of channels in order to improve a bit rate of the at least one of the plurality of channels in the communications system [according to a design criteria].

Please add the following new claim(s):

2. (New) The method claim 1 wherein predicting the performance of the at least one of the plurality of channels comprises:

inputting data from at least one channel of the communications system into a prediction module;

creating at least one transfer function model of the at least one channel;

determining an impairment on the at least one channel;

characterizing the at least one channel using the at least one transfer function model and the impairment.

3. (New) The method of claim 2 wherein the at least one transfer function model is created using physical configuration information of the communications system.

4. (New) The method of claim 2 wherein the at least one transfer function model is created using a spectrum management system.

5. (New) The method of claim 2 wherein the at least one transfer function model is created by measuring the transfer function from the communications system.

6. (New) The method of claim 2 wherein the impairment is selected from the group consisting of: a cross-talk impairment, an AM radio interference, a temperature impairment, and any combination thereof.

7. (New) The method of claim 1 wherein optimizing the parameters comprises:

a) choosing a first parameter for the channel;

b) choosing a second parameter for the channel;

c) determining an optimization criteria for the channel based upon the first parameter and the second parameter;

d) repeating a) – c) until the optimization criteria is optimized for the communications system.

8. (New) The method of claim 1 wherein the communications system is a wireline communications system.

9. (New) The method of claim 1 wherein the communications system is a wireless communications system.

10. (New) The method of claim 1 wherein the communications system is an optical communications system.

11. (New) The method of claim 1 wherein the communications system is a cable communications system.

12. (New) The method of claim 1 wherein the communications system is a DSL communications system.

13. (New) A system for the prediction and optimization of a communications system comprising:

a prediction module, wherein the prediction module predicts the performance of at least one channel in the communications system by providing a characterization of at least one parameter that describes the channel; and

an optimization module, wherein the optimization module finds the optimum characterization for the channel based on at least one design criteria.

14. (New) The system of claim 13 wherein the design criteria are selected from the group consisting of: a cost of deployment, a signal to noise ratio, a total revenue, a bit rate, and any combination thereof.

15. (New) The system of claim 13 wherein the communications system is a wireline communications system.

16. (New) The system of claim 13 wherein the communications system is a wireless communications system.

17. (New) The system of claim 13 wherein the communications system is an optical communications system.

18. (New) The system of claim 13 wherein the communications system is a cable communications system.

19. (New) The system of claim 13 wherein the communications system is a DSL communications system.

20. (New) A method for the prediction of the performance of a communications system comprising:

inputting data from at least one channel of the communications system into a prediction module;

creating at least one transfer function model of the at least one channel;

determining an impairment on the at least one channel;

characterizing the at least one channel using the at least one transfer function model and the impairment.

21. (New) The method of claim 20 wherein the at least one transfer function model is created using physical configuration information of the communications system.

23. (New) The method of claim 20 wherein the at least one transfer function model is created by measuring the transfer function from the communications system.

24. (New) The method of claim 20 wherein the impairment is selected from the group consisting of: a cross-talk impairment, an AM radio interference, a temperature impairment, and any combination thereof.

25. (New) The method of claim 20 wherein the communications system is a wireline communications system.

26. (New) The method of claim 20 wherein the communications system is a wireless communications system.

27. (New) The method of claim 20 wherein the communications system is an optical communications system.

28. (New) The method of claim 20 wherein the communications system is a cable communications system.

29. (New) The method of claim 20 wherein the communications system is a DSL communications system.

30. (New) A method for the prediction and optimization of a communications system comprising:

inputting data from at least one channel of the communications system;

predicting a performance of at least one of the channels using at least one parameter to characterize the performance of the channel; and

optimizing the at least one parameter of at least one of the channels in order to improve a bit rate of the at least one of the channels in the communications system.

31. (New) The method claim 30 wherein predicting the performance of the at least one of the channels comprises:

inputting data from at least one channel of the communications system into a prediction module;

creating at least one transfer function model of the at least one channel;

determining an impairment on the at least one channel;

characterizing the at least one channel using the at least one transfer function model and the impairment.

32. (New) The method of claim 31 wherein the at least one transfer function model is created using physical configuration information of the communications system.

33. (New) The method of claim 31 wherein the at least one transfer function model is created using a spectrum management system.

34. (New) The method of claim 31 wherein the at least one transfer function model is created by measuring the transfer function from the communications system.

35. (New) The method of claim 31 wherein the impairment is selected from the group consisting of: a cross-talk impairment, an AM radio interference, a temperature impairment, and any combination thereof.

36. (New) The method of claim 30 wherein optimizing the at least one parameter comprises:

a) choosing a first parameter for the channel;

b) choosing a second parameter for the channel;

c) determining an optimization criteria for the channel based upon the first parameter and the second parameter;

d) repeating a) – c) until the optimization criteria is optimized for the communications system.

37. (New) The method of claim 30 wherein the communications system is a wireline communications system.

38. (New) The method of claim 30 wherein the communications system is a wireless communications system.

39. (New) The method of claim 30 wherein the communications system is an optical communications system.

40. (New) The method of claim 30 wherein the communications system is a cable communications system.

41. (New) The method of claim 30 wherein the communications system is a DSL communications system.